

Broad Agency Announcement (BAA)

AFLCMC/HNAN Nuclear C3 Terminals Branch

Hanscom AFB, MA 01731

Call 0001 Announcement to BAA No: BAA-HNAK-2017-0001

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Federal Agency Name: Air Force Life Cycle Management Center (AFLCMC/HNAN)

Broad Agency Announcement Title: Very Low Frequency/Low Frequency (VLF/LF) Communications Solutions

Broad Agency Announcement Number: BAA-HNAK-2017-0001

White Papers Call Announcement (Call) Title: Focus Area # - VLF/LF Antennas/Receivers

Call Announcement (Call) Number: 0001

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Brief Summary of Need: The Air Force is seeking unclassified research white papers that do not contain proprietary information. If proprietary information is submitted, it is the offerors' responsibility to mark the relevant portions of their white paper appropriately. The focus of this BAA Call is to solicit industry and academia assistance in assessing whether there have been advances in science and technology that could be potential solutions to urgent problems in VLF/LF Communications Technologies. Specifically, the Air Force is looking for technology updates to modern receiver, antenna, and waveform capabilities and technical solutions As such

solutions are identified and reviewed, the Nuclear C3 Terminals Branch will work in partnership with industry and academia to conduct research and development, and possibly demonstrate viable solutions. Specific research areas of interest include the following two major Focus Areas: A) VLF Receivers, B) VLF Antennas. Areas of interest within the two focus areas include, but are not limited to: capacity, feasibility, and other technological advancements in the areas of receiver, antenna, and waveform – to include expanded modernized advanced capabilities. Performance improvement objectives at this time include target range, time of receipt, interoperability, and cost reductions via platform commonality as well as other classified performance attributes. Proposed advancements should address their relevance as solutions to current performance requirements.

This CALL is specifically requesting potential Offeror(s) to provide white papers on the below topics.

Focus Area A: VLF Receivers

RECEIVER: Presented advancements and/or solutions to the current VLF receiver shall meet critical Nuclear Command, Control and Communications technical performance criteria requirements. Ideally, presented advancements and/or solutions shall also be compatible with current receiver capability and sustainment objectives as the possibility exists to consolidate current receiver variants into one common system in order to reduce total life cycle costs for the Air Force VLF/LF enterprise. The new targeted system shall be interoperable with all legacy waveforms in addition to the two new VLF modes (Unified MEECN Mode and Special Flexible Modes) and shall leverage all attributes and lessons learned from the CVR Inc 1 program. The CVR Inc 2 program shall modernize the receiver hardware and software and shall have the capability for future growth in case all modes/functions/modernization enhancements are not immediately implemented.

Descriptions pertaining to advancements that may inform viable technical solutions should include a sufficient description of the advancement, its relevance to meeting performance improvements (e.g. target range, time of receipt, interoperability, and cost reductions via platform commonality as well as other classified performance attributes), and (if applicable) current technology readiness levels (TRLs).

Focus Area B: VLF Antennas

ANTENNA: Areas of interest are recent technological advances in anti-jam techniques, signal processing techniques, error correction/detection techniques, long haul communication techniques, software, hardware and associated expected performance, as a minimum, that may be viable/feasible as an addition or possible replacement for some portion of the multiple hardware antenna approach of legacy VLF systems.

Use of smart VLF antennas and their expected performance may be viable/feasible and are invited to be part of the BAA study effort also. Any other techniques for increasing VLF receiver performance and capabilities associated with modernization, are invited as part of this effort.

VLF Cryptographic modernization occurred 2000-2010 and the responses to this area of interest shall address cryptography and its associated expansion capabilities to include new modes/functions.

Descriptions pertaining to advancements that may inform viable technical solutions should include a sufficient description of the advancement, its relevance to meeting performance improvements (e.g. target range, time of receipt, interoperability, and cost reductions via platform commonality as well as other classified performance attributes), and (if applicable) current technology readiness levels (TRLs).

REQUIREMENT DESCRIPTION: The Air Force is soliciting white papers for research under Section II of the Broad Agency Announcement HNAK-BAA-2017-0001 specifically for Focus Area A: VLF Receivers and Focus Area B: VLF Antennas.

I. Two-Step Call Announcement

First Step: White Papers

1. White papers submitted in response to this Call shall conform to the requirements found in BAA-HNAK-2017-0001, Section III and the requirements found in Section II of this Call.
2. **Content and Form of Submission for White Papers:** Each white paper submitted under this BAA must be unclassified and contain a title, name and address of the company, CAGE Code, Technical and Contracting points of contact, Telephone Number, and E-mail Address, proposed project and a brief description. Also, provide your DoD Technology Readiness Level, if available. An optional expanded description may be provided by the offeror with the statement that all information is non-proprietary. This information may be made available to Government personnel within the Department of Defense to determine if this concept may be appropriate for their mission. Responder white paper and proposals shall use no smaller than 12 point Times New Roman font and no longer than 25 pages total.
3. The Air Force is soliciting a request for white paper(s). These will be evaluated by a government team to determine which of the abstracts/white papers have the potential to fulfill Air Force needs before full proposals are requested. Offerors will be notified of the disposition of their abstract/white paper.
4. White papers should address any or all of the objectives found in this Call. White papers may be submitted for one or more topics or for a specific portion of one topic. A proposer may submit separate white papers on different topics or different proposals on the same topic. The U.S. Government does not guarantee an award in each topic area. Further be advised, as funds are limited, otherwise meritorious white papers may not be funded. Therefore, it is important that white papers show strength in as many of the evaluation areas as practicable for maximum appeal.

5. **White Paper Evaluation:** Full proposals may be requested from those white papers receiving the highest evaluations.

White Paper Due Date and Time: The due date for white papers submitted in response to this Call is no later than **1700 EST, Monday 21 August 2017**. White papers received after the due dates and times will be considered untimely and will not be accepted.

Funding Restrictions: The cost of preparing white papers in response to this Call is not considered an allowable direct charge to any resulting or other contract.

Second Step: Proposals

1. **Government One-on-ones:** Those offerors with favorable white paper evaluations may be requested to participate in one-on-one dialogues with the Government prior to issuance of an RFP.
2. Those offerors submitting abstracts/white papers assessed as meeting Air Force needs may be asked to submit a technical and cost proposal via an RFP letter. The letter will contain thoroughly detailed instruction information and proposal due date(s).
3. After receipt, proposals will be evaluated in accordance with the award criteria in Section II below, as otherwise adjusted in amendments to the basic BAA and/or this Call, and/or in the RFP letter. Proposals will be categorized and subsequently may be selected for negotiation.

Intent to Submit: Should potential offerors receive a formal request for proposal (RFP), they are requested to advise the CO by email if they intend to submit a proposal. Such notification is merely a courtesy and is not a commitment by the offeror to submit a proposal.

Proposal Instructions: Offerors are requested to follow the instructions within the baseline BAA, BAA-HNAK-2017-0001 and the RFP letter (if issued). All proposals must be submitted per the instructions contained in the RFP letter.

Anticipated Funding for this Call: \$1M

1. Current FY17 funding is approximately \$1M. This funding profile is an estimate only and will not be a contractual obligation for funding. All funding is subject to change due to government discretion and availability of funds.

Note: Changes in availability may occur as a result of Government discretion.

Period of Performance: The period of performance for awards resulting from this Call will be determined as viable solutions are evaluated and identified for further investigation.

Call Amendments: Offerors should monitor FedBizOps at <http://www.fbo.gov> for any additional notices to this Call that may permit extensions to the proposal submission date or otherwise modify this announcement.

Anticipated Number of Awards: The Government reserves the right to make multiple awards or no award at all pursuant to this Call. Award of a contract to universities or nonprofit institutions will be subject to the mutual agreement of the parties.

Anticipated Award Date: The expected award date of this Call will be during the 4th Quarter of FY2017.

NOTE! Offerors may be ineligible for award if all requirements of this announcement are not met by the white paper due date and time.

II. White Paper Review Information

1. General Instructions for White Papers:

- a. Offerors should consider proposal instructions contained in the BAA guide for industry. This guide is specifically designed to assist the offeror in understanding the BAA proposal process. It can be accessed at <http://www.wpafb.af.mil/Portals/60/documents/afrl/AFRL-broad-agency-announcement-guide.pdf?ver=2016-07-08-141724-390>
- b. Submittals should include the following:
 - i. Focus Areas and Application name and number for which that white paper might apply
 - ii. Tracking Number for reference (if the company uses tracking identifications)
 - iii. Identify if this effort has been or is currently being worked for another federal entity, to include a POC and the stage.
 - iv. Has this idea been submitted for any previous BAA? If so, what are the relevant changes and include a POC for the previous BAA effort(s)?
- c. White Papers are intended to provide a brief overview of the concept being presented. White Papers will be initially evaluated based upon very limited criteria based on the Technology Focus area identified in this Call for papers. In addition to the criteria discussed in the Brief Summary of Need, additional evaluation areas include solution viability, technical value, and risk. White Papers may not exceed 25 pages, excluding title page and shall provide:
 - i. Its connection to a specific Focus Area and identification of a TRL

- ii. A description of the technical effort
 - iii. The lineage of the white paper or relevant background
 - iv. ROM-level cost and schedule estimates
- d. Lineage and background is of particular interest and importance. The Air Force is interested in the leveraging of existing capabilities and technologies as well as new, undeveloped approaches. Evaluations will consider whether the concept represents a new effort or the continuation or innovative use of an existing effort.
- e. Must be prepared in MS Word Format. Character spacing must be "normal," -- not condensed in any manner. Pages shall be double-spaced, single-sided, 8.5 by 11 inches, with at least one-inch margins on sides, top and bottom. Lines between text lines must also be 12-point. All text, including text in tables and charts, must adhere to all font size and line spacing requirements listed herein. Font and line spacing requirements do not have to be followed for illustrations, flowcharts, drawings, and diagrams. These exceptions shall not be used to circumvent formatting requirements and page count limitations by including lengthy narratives in such items. Pages shall be numbered starting with the cover page being Page 1, and the last page being Page 25. The page limitation covers all information including indices, photographs, foldouts (counted as 1 page for each 8.5 by 11 portion) tables, charts, appendices, attachments, resumes, etc.

Please Note: The Government will check for conformance to the stated requirements. Any pages in excess of the stated page limitation after the format check will not be considered. In addition, if the white paper does not conform to the above requirements, a notification will be sent to the offeror's company management to advise of the nonconformance.

III. White Paper and Proposal Evaluation Assessments

1. Evaluation Team

- a. Responders are hereby notified that the Government intends to utilize an Evaluation Team in the white paper evaluation process and in determining which initiatives should proceed to step two. The Evaluation Team may consist of Government personnel, Federally Funded Research & Development Centers (FFRDC) personnel, Technical Services and Engineering Support personnel, Systems Engineering and Technical Assistance (SETA) personnel, Professional Acquisition and Support Services (PASS II) personnel and Engineering and Technology Acquisition Support Services (ETAS II) personnel. Evaluation Team members will be required to sign nondisclosure forms or OGE Form 450s prior to their participation.

2. Assessment Areas

- a. The objective of the evaluation is to identify Responders who will provide the greatest satisfaction of requirements/objectives within funding limitations. The applicability and potential impact of the proposed effort to the Air Force mission will be evaluated. Concepts will be evaluated based on the merit and relevance of the specific effort proposed as it relates to the Air Force focus area objectives and other criteria identified in this section, rather than against other concepts covering the same general area or other areas. The evaluation also includes problem comprehension, and the degree to which the proposed solution(s), if successful, will address a viable technical solution. Each submission will be prioritized within the scope of the entire ALFCMC program execution mission. White Papers will typically be reviewed by the appropriate requiring activity within 30 days after submission by the Responder.

3. Evaluation Criteria

- a. Per FAR 35.016, Proposals received as a result of the BAA shall be evaluated through a peer or scientific review process.
- b. The selection of one or more sources for award will be based on an evaluation of each offeror's white paper (both technical and cost/price aspects) to determine the overall merit of the white paper in response to the announcement, as well as on Agency need and funding availability.
- c. This assessment will address or establish the technical worthiness of the proposed effort. Items to be considered include technical approach toward achieving the stated objective(s), and the existence of sufficient technical payoff to warrant risk. Efforts should focus on truly new and unique approaches and techniques to existing systems that lead to, or enable revolutionary and evolutionary improvements in capability, performance, and/or cost.
- d. The degree to which the proposed effort presents a new and innovative approach will be evaluated. The Air Force is interested in projects that are investigating previously unexplored approaches, methods, sources, etc. Of most interest are those ideas that represent a creative use of existing capabilities. This could cover an innovative method of exploiting existing information, or a means to combine existing technologies in a creative manner. Where possible, identify the Technology Readiness Level (TRL), preferably TRL numbers 6, 7 and 8 as these are significant and most desired by the Government; however, other TRL numbers will be considered. Refer to the following TRL definitions to assist with your identification in the white paper (source: Technology Readiness Assessment Deskbook – Appendix C)

TRL 1: Basic principles observed and reported

TRL 2: Technology concept and/or application formulated

TRL 3: Analytical and experimental critical function and/or characteristic proof of concept

TRL 4: Component and/or breadboard validation in a laboratory environment
TRL 5: Component and/or breadboard validation in a relevant environment
TRL 6: System/subsystem model or prototype demonstration in a relevant environment
TRL 7: System prototype demonstration in an operational environment
TRL 8: Actual system completed and qualified through test and demonstration

4. Risk Assessment.

- a. This assessment will evaluate the proposed approach/white paper's likelihood of success to include cost, schedule, performance and transition. ROM-level cost and schedule estimates should be included.
- b. The assessment will evaluate the reasonableness and accuracy of the ROM cost/schedule estimate.
- c. Transition risk assessment consists of an evaluation of potential risk to the project in consideration of the technical performance and TRL level.

5. Review and Selection Process for White Papers and Proposals

- a. **Categories:** The white papers, technical, and cost proposals will be evaluated similarly and categorized as follows:
 - i. **Category I:** Submission is well conceived, scientifically and technically sound, pertinent to the program goals and objectives, and offered by a responsible contractor with the competent scientific and technical staff and supporting resources needed to ensure satisfactory program results. Proposals in Category I are determined to be technically acceptable, but will be recommended for award based on availability of funds. They are normally displaced only by other Category I proposals.
 - ii. **Category II:** Submission is scientifically or technically sound requiring further development and are recommended for acceptance, but are at a lower priority than Category I.
 - iii. **Category III:** Submission is well conceived, but questions remain as to the viability of the proposed solution and the inherent risk involved in pursuing a funding action.
 - iv. **Category IV:** Submission is not technically sound or does not meet BAA needs/goals.

IV. Award Administration Information

- 1. Award Notices: White Papers found to be consistent with the intent of this Call may be

invited to submit a full proposal via an RFP letter. Such invitation does not assure that the submitting organization will be awarded a contract. Those white papers not selected to submit a proposal will be notified in the same manner. **Prospective Offerors are advised that only COs are legally authorized to commit or obligate the Government.**

- a. Offerors will be notified via e-mail whether or not their proposal is recommended for award on or about the date specified in the RFP. An award recommendation is not to be construed to mean the award of a contract is assured, as availability of funds and successful negotiations are prerequisites to any award.
- b. Offerors can request status of their white paper/proposal no earlier than 45 days after white paper or proposal submission.

V. Other Information

1. **Support Contractors:** Offerors are advised that employees of commercial firms under contract to the Government may be used to administratively process proposals, monitor contract performance, or perform other administrative duties requiring access to other contractors' proprietary information. These support contracts include nondisclosure agreements prohibiting their contractor employees from disclosing any information submitted by other contractors or using such information for any purpose other than that for which it was furnished.
2. **Dialogue:** Dialogue between prospective Offerors and Government is encouraged until proposal due date. Dialogue with any of the POCs shall not constitute a commitment by the Government to subsequently fund or award any proposed effort. All dialogue shall be initiated through the Contract Office POC identified in this Call.
3. **Forward Pricing Rate Agreements:** Offerors who have forward pricing rate agreements (FPRAs) and forward pricing rate recommendations (FPRRs) shall submit them with their proposals.
4. **International Traffic in Arms Regulations (ITAR):** Include dual use items; items identified in export administration regulations, international traffic in arms regulations, and munitions list; license applications; and sensitive nuclear technology information. Compliance with Export Control Requirements. The Contractor shall be solely responsible for compliance with U.S. State Department Export License requirements. Contractor and all Subcontractors must be registered with U.S. State Department Directorate of Defense Trade Controls (DDTC). The Contractor may be required to inform the Government of their DDTC Registrant Code.

White Paper/Proposal Content Checklist

1. You may be ineligible for award if all requirements of this solicitation are not met on the

white paper/proposal due date.

2. White papers/proposals are due to the Contracting POC specified in this Call.
3. White papers/proposals are due no later than the due date and time specified in this Call.
4. White papers/proposal page limits are strictly enforced.
5. White Papers must be submitted in the format specified in Section I and II.
6. If a DD254 is applicable, offerors must verify their Cognizant Security Office information is current with Defense Security Service (DSS) at www.dss.mil.
7. If effort is subject to export control, offerors must submit a Certified DD Form 2345, Militarily Critical Technical Data Agreement, with proposal.

Contracting Office Address:

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